DOCUMENT RESUME

ED 193 953 FL 011 931

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TITLE An Evaluation of Project Information Packages (PIPs) as Used for the Diffusion of Bilingual Projects. Volume I: Summary Report.
INSTITUTION RMC Research Corp., Mountain View, Calif.
SPONS AGENCY Office of Education (DHEW), Washington, D.C. Office of Evaluation and Dissemination.
REPORT NO RMC-UR-460
PUB DATE May 80
CONTRACT 300-77-0313
NOTE 81p.: For related documents, see FL 011 932-933.

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Bilingual Education: *Diffusion: Summative Evaluation
IDENTIFIERS *Bilingual Programs: *Project Information Packages

ABSTRACT

This report describes an evaluation of Project Information Packages (PIPs), sets of manuals and other materials intended to help a school district adopt and implement an exemplary education project. Four PIPs were evaluated in a field test, each PIP describing a different bilingual project. It was concluded that the awareness materials produced few applications for PIPs. Field-test sites that received PIPs tended not to follow PIP guidelines closely, but to adapt them extensively, often with good justification. The bilingual programs at the sites were collectively successful, but the dissemination effort could not be judged a success. The present volume comprises: (1) an executive summary of the study questions and findings, (2) an introduction to the study, (3) a non-technical summary of the process evaluation of the PIP diffusion efforts, and (4) a non-technical summary of the impact evaluation of the diffusion effort on students. The volume is interded to provide a self-contained overview of the policy-related study questions and conclusions. (Author)

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AN EVALUATION OF PROJECT INFORMATION PACKAGES (PIPs) AS USED FOR THE DIFFUSION OF BILINGUAL PROJECTS

VOLUME I

SUMMARY REPORT

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RMC Report UR 460

USOE Contract No. 300-77-0313

May 1980

RMC Research Corporation
Mountain View, California

FL011 951

This report is made pursuant to contract No. 300-77-0313. The amount charged to the Department of Health, Education, and Welfare for the work resulting in this report (inclusive of the amounts so charged for any prior reports submitted under this contract) is $1,113,205. The names of the persons, employed or retained by the contractor, with managerial or professional responsibility for such work, or for the content of the report, are as follows:

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

PREFACE

This report describes an evaluation of Project Information Packages (PIPs), a specific type of packaging, as field tested by the United States Office of Education (USOE) for the diffusion of four bilingual projects. The field test began with the dissemination of the PIPs in the fall of 1976. The evaluation described here began about nine months later (summer, 1977) and continued through the 1978-1979 school year.

This report consists of three volumes, as follows:

Volume I, the present volume, comprises (a) an executive summary of the study questions and findings, (b) an introduction to the study (Section 1), (c) a non-technical summary of Substudy I, the process evaluation of the PIP diffusion effort (Section 2), and (d) a non-technical summary of Substudy II, the evaluation of the impact of the diffusion effort on students (Section 3). This volume is intended to provide a self-contained overview of the policy-related study questions and conclusions.

Volume II, the Technical Discussion and Appendices, documents the methodology and results of the two substudies and provides more detailed discussions of conclusions and recommendations. This volume also includes five appendices: (a) site-by-site results of the process substudy, (b) site-by-site results of the impact substudy, (c) the complete conceptual framework used in the process evaluation substudy, (d) a comparative analysis of the contents of the four bilingual PIPs, and (e) a summary of the major, mid-study inputs from the study advisory panel.

Volume III, is a collection of specific evaluation guidelines and job aides that were developed for the use of the field-test sites and which have been organized in the format of a Prototype Evaluation Manual. This volume should be viewed as a preliminary draft rather than a finished product. Further, it deals in detail only with the evaluation of student achievement, which is only one component of a complete, bilingual program evaluation.

AN EVALUATION OF PROJECT INFORMATION PACKAGES (PIPs) AS USED FOR THE DIFFUSION OF BILINGUAL PROJECTS

EXECUTIVE SUMMARY

The study described here was a field test of Project Information Packages (PIPs). A PIP is a set of manuals and other materials intended to help a school district adopt and implement an exemplary educational project. In this field test, four PIPs were evaluated, each of which described a different bilingual project.

This study was one of a series of diffusion[1] studies funded by the United States Office of Education (USOE) to investigate the effectiveness of PIP-type packaging.[2] RMC has also participated in two other diffusion field tests in this series. These field tests evaluated PIPs that described compensatory-education projects. The general conclusions presented here reflect the experience of all three field tests (see Bibliography, page 61).

The intended audience for this summary, and for the associated final report, includes those interested in the planning, implementation, or evaluation of large-scale, educational diffusion efforts. The study did not examine either the methods or the effectiveness of bilingual education.

This summary is organized under four headings:

- Synopsis of the Bilingual-PIP Field Test
- The Study Questions and the Dual RMC Role
- Substudy I: Diffusion of Projects via PIPs
- Substudy II: Impact on Achievement

The first two sections provide the background for the study conclusions, while the latter two sections describe the major conclusions, recommendations, and products of the study.

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[1] "Diffusion" in this report means the transfer of educational projects or practices to adopting school districts. The term implies implementation of the projects/practices. "Dissemination," by contrast, means transmitting information about projects/practices. Implementation is not necessarily implied.

[2] "Packaging," in this report, means (a) the systematic analysis of project features, plus (b) development of descriptive and how-to-do-it materials.

Synopsis of the Bilingual-PIP Field Test

Who Was Involved in the Field Test?

The evaluation of the bilingual PIPs was funded by the Office of Education for a 30-month period (1977-1979), and conducted by RMC Research Corporation. The diffusion effort involved 19 school districts across the country, each of which received an ESEA Title VII grant to implement one of four packaged, bilingual projects.

What Were the Origins of the Four Bilingual Projects?

The four projects were originally developed by local school districts for their own students, were identified as exemplary by another contractor in a USOE-sponsored nationwide search, and were validated by the Joint Dissemination Review Panel (JDRP)[3]. The projects are:

- Project Adelante, from Corpus Christi, Texas.....Spanish/English
- Project Nuevos Horizontes, from Houston, Texas....Spanish/English
- Project Savoir, from St. John Valley, Maine.....French/English
- Project Venceremos, from Alice, Texas.....Spanish/English

What Were the Origins and Contents of the PIPs?

The four PIPs were developed by CEMREL Inc. under a separate USOE contract. Each package consisted of a set of how-to-do-it manuals, plus a synchronized tape and filmstrip, and some awareness materials. In general, a different manual was prepared for each type of project staff member--project director, teacher, instructional consultant, evaluator, and so on. Some of the PIPs also included a manual for the use of performance objectives, a staff development manual, and a few site-developed instructional materials.

How Were the Bilingual PIPs Disseminated?

Dissemination and support services. The PIPs were disseminated by USOE via the network of 15 Bilingual Training Resource Centers (TRCs) funded by the USOE Office of Bilingual Education (OBE). These centers provided PIP-awareness materials to target LEAs in their regions and followed up with telephone calls. Many also helped LEAs prepare Title VII grant applications, and later provided staff training services under the same conditions that they provided training to other Title VII programs.

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[3]The JDRP is a panel formed jointly by USOE and the National Institute of Education (NIE) to review all projects or practices proposed for dissemination under USOE or NIE sponsorship.

Grant application procedures. LEAs used PIP materials to help in preparing Title VII grant applications with the understanding that each successful applicant would receive a copy of the appropriate PIP at no cost. However, most applicants were instructed not to mention the PIPs and were presumably judged anonymously along with all other Title VII applications.

What Were the Results of the Bilingual PIP Diffusion Effort?

Adoption. The awareness materials and telephone calls produced very few applications for PIPs. Most of the 19 adoptions resulted from personal contacts between local personnel and state or federal officials.

The process of matching the three different Spanish/English projects to specific adopter-site needs and resources was based on superficial project characteristics and, in effect, assignment was virtually random. The lack of procedures for selecting among the PIPs had little effect on the field-test results, however, since there were few major differences among the PIP projects.

Implementation. RMC site visitors reported that, in their judgments, the bilingual-program features implemented in most of the field-test sites ranged from adequate to excellent by current standards. However, since the focus was on the effectiveness of the PIP packages as diffusion tools, formal assessment of program quality was not included in the study. The central question was whether the sites followed PIP guidelines closely.

The answer was that, in general, they did not. Extensive adaptation was the rule, often (in RMC's judgment) with good justification. In fact, the PIPs were found to be a relatively minor influence in most sites. Program characteristics were shaped largely by local factors, federal and state regulations, outside consultants, and neighboring LEA programs. However, the lack of replication should not be construed as a deficiency of the field-test-site programs. On balance, deviations from the PIP guidelines probably improved suitability to local conditions.

Thus, while the bilingual programs in the 19 field-test sites could be considered a collective success in terms of project features, the PIP-based diffusion effort was not successful. The major breakdowns in the diffusion effort came in:

- Establishing diffusion-system goals
- Selecting projects for diffusion
- Packaging the projects
- Selecting and training diffusion agents

In short, the major breakdowns occurred in the planning and preparation stages, well before any target LEAs became involved in the diffusion effort.

The Study Questions and the Dual RMC Role

There were two basic types of questions addressed in this study resulting, in effect, in two distinct substudies. RMC played very different roles in the two substudies.

Substudy I. Diffusion of Projects via PIPs

Substudy I question. The major focus of this substudy (and of the study as a whole) was on the effectiveness of the four bilingual-PIP packages in establishing the exemplary projects in the field-test sites. This substudy was primarily a process evaluation of project adoption and implementation, focusing on these four PIP packages. It was not: (a) a study of the four bilingual projects chosen for PIP packaging, or (b) a comparison of alternative diffusion approaches.

RMC role in Substudy I. RMC was an outside evaluator of the PIP packages. RMC did not participate in: (a) developing the four exemplary bilingual projects in the originating sites, (b) selecting the four projects for diffusion, (c) developing the four bilingual PIPs, (d) disseminating the four bilingual PIPs, or (e) implementing the projects in the 19 field-test sites.

Substudy II. Impact on Students

Substudy II question. A secondary study question concerned the impact of the PIP-based diffusion effort on student achievement (attitudes and other impacts were examined, but in less depth). That is:

- Did program changes resulting from the diffusion effort lead directly to improved achievement?

This question was of secondary interest, because there was no guarantee that the intended program changes would occur and, in any case, the programs could only be observed in their first two (developmental) years.

Answering this question required a specialized, limited form of outcome evaluation. The study did not address the general outcome question--"How well did the bilingual-program students perform?" since change (improvement) in student achievement is the goal of a diffusion effort, and high performance levels are not proof of improvement, nor are low levels proof that no improvement has occurred.

RMC role in Substudy II. RMC used local achievement evaluations from the 19 field-test sites in the attempt to determine the impact of the diffusion effort on student achievement. RMC also played a major role as consultant to the sites on outcome evaluation, but final authority was retained by the site, as was responsibility for all testing and for data analysis.

Substudy I: Diffusion of Projects via PIPs

Conclusions

The principal contribution of the bilingual-PIP field test was to reemphasize the need for a more orderly, systematic approach to planning all diffusion efforts. This need was equally apparent in the two compensatory-education-PIP field tests.

The final report for this study treats a diffusion effort as a system composed of six major elements:

1. The diffusion goals set by the agency that plans the system.
2. The projects[4]/practices available for diffusion.
3. The target LEAs, with their specific attitudes, needs, and resources.
4. The delivery system for bringing the projects/practices and the target LEAs together, including personnel, materials (e.g., PIPs), and all other resources.
5. The incentives for LEAs to (or not to) adopt projects and implement them accurately.
6. The competition faced by the system in the form of laws and regulations, other formal or informal diffusion systems, etc.

In the PIP diffusion attempts, these six elements were considered in isolation; some of them were not considered at all. The major recommendation from this study is that all six elements should be considered explicitly and systematically, in planning or analyzing a diffusion study. The major product of the study is a conceptual framework that can facilitate such systematic planning or analysis.

The following paragraphs first summarize the general conclusions of the three PIP field tests and then indicate the conclusions specific to this bilingual-PIP study. The conclusions are organized according to the six diffusion-system elements listed above.

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[4]The report makes a critical distinction between "programs" and "projects." A "project" consists of procedures and guidelines, staff specifications, materials, and so on, that can, in principle, be transported to an adopter site. The project is distinguished from the "context" which includes the actual personnel, students, facilities, and community. A program is a project as it actually operates in a particular context (i.e., program = project + context). A major difficulty in many diffusion efforts is that a program is validated but a project is disseminated. In some cases, it appears that the context, not the project, is actually the exemplary component of the program and, of course, an exemplary context (e.g., exemplary teachers) cannot be disseminated.

1. Goals of the planning agency. At the most general level, the USOE goal for the PIP diffusion efforts was to promote cost-effective improvement for students and staff. Specific PIP-diffusion goals included:

A. Diffusion of intact, exemplary projects as validated by the JDRP.

B. Rapid, efficient implementation in new adopter sites.

C. Minimal technical assistance (stand-alone packaging).

D. Positive impact on student achievement.

These goals may be reasonable ones for certain diffusion efforts involving structured, instructional procedures, and LEAs with strong incentives to follow the printed guidelines closely. However, as will be seen under the five following headings (i.e., projects, target LEAs, delivery system, incentives, and competition), and under "Impact Conclusions," these goals are not widely appropriate to and, specifically, are inconsistent with the realities of bilingual programs. The four goals listed above could be revised for bilingual-education diffusion efforts as follows:

A. Diffusion of exemplary practices (i.e., components of bilingual projects) since most bilingual projects are too complex to be adopted intact by another school district (see footnote 4, above, and "projects/practices," below).

B. Gradual implementation, with long-term staff development (see Target LEAs).

C. A balance of technical assistance and packaging, with packaging formats tailored to the needs of the LEAs, the characteristics of the exemplary practices, and the overall approach to technical assistance (see Delivery System).

D. Positive impact on student achievement should remain as one of the ultimate goals of bilingual-education diffusion efforts, but the problems of measuring impact in school settings should be recognized. Practices should be validated under more controlled conditions than are possible in large-scale field tests. Field-test evaluations should focus on implementation of the exemplary practices (see Substudy II: Impact on Achievement).

2. Projects/practices available for diffusion. It can be argued that the set of projects/practices is the most important element of the diffusion effort. The projects chosen for PIP-packaging were selected from among exemplary programs operating in school districts. Selection techniques did not separate context effects from project effects nor were project characteristics analyzed adequately in terms of target-LEA needs and resources.

- Projects or practices must be carefully analyzed, and selected to match the needs and resources of the target LEAs. For example, while the four bilingual projects chosen for PIP packaging depended heavily on good bilingual teachers following general guidelines, many field-test sites did not have such teachers and therefore needed specific instructional procedures that could be used by monolingual English-speaking teachers with Spanish/French-speaking aides.

- Adoption of whole, intact projects is reasonable only for encapsulated, instructional projects (e.g., a pull-out, reading lab). Projects affecting the operation of the school as a whole should be treated as a collection of components (management components, instructional components, parent involvement components, and so on) that can be disseminated as separate units. Typically, an exemplary bilingual program is made up of many such highly interdependent and context-determined components and cannot be diffused as an intact unit.

3. Target LEAs. It is generally acknowledged that LEAs vary widely in terms of:

- Student needs
- Staff and material resources
- Organizational structures
- Readiness and motivation for change
- Information seeking behavior

The PIP studies have shown that these variates affect both the kinds of projects/practices needed and the kinds of dissemination activities that are required. The number of target LEAs with similar needs should also be taken into account in planning diffusion activities.

LEAs that are potential targets for the diffusion of bilingual projects/practices cover the complete ranges on all of the above variates. Therefore, the specific target pool must be carefully analyzed and clearly defined before planning any bilingual-project diffusion effort. Two important generalizations can be made: (a) Many target LEAs require extensive, long-term staff development programs in order to implement successful bilingual programs. Rapid start-up is simply not feasible; (b) Target pools for Spanish-English projects/practices are likely to be large. Target pools for other languages will be much smaller and require very different diffusion approaches.

4. Delivery system. The delivery system includes all personnel, materials, and other resources used to bring the projects/practices and the target LEAs together. In this study, the major components of the delivery system were the PIPs and (secondarily) the TRCs.

A delivery system must provide awareness plus technical support for selection and implementation of the projects/practices. In most kinds of diffusion efforts, an integrated mix of personnel and packaging is needed for an effective delivery system. PIP-type, stand-alone packaging is suitable under only a few, specialized conditions.

The PIP studies have shown that printed materials (whether in PIP or other formats) are well suited to providing reference information, but not to:

- focusing attention on key project features,
- persuading adopters to try new ideas,
- identifying problems and providing feedback, or
- providing reassurance,

all of which are essential delivery-system functions. Other media (e.g., film, videotape) appear to have some of the same problems, although they were not evaluated in these studies.

The major recommendation of this study (and the other PIP studies) is that a systematic approach should be used in planning diffusion systems. In practice, this means that the delivery system must be designed to fit the goals, projects/practices, target LEAs, incentives, and competition that constitute the other major elements of the diffusion system.

In general, a combination of packaging and technical assistance will be required. However, elaborate packaging (e.g., PIPs) is expensive and time consuming. It is cost effective only for large pools of target LEAs, and for projects/practices that will not become obsolete too quickly.

These generalizations apply equally to delivery systems for bilingual or non-bilingual projects/practices. A need for complementary efforts in local capacity building, while not unique to bilingual education, should be a special concern here due to the short supply of experienced bilingual personnel in many target LEAs.

5. Incentives. The PIP studies and other diffusion studies have shown that LEAs must be strongly motivated before they will make changes. Incentives to change may be provided by the desires of LEA personnel to improve programs or by legal requirements to provide new services. However, these kinds of incentives usually do not motivate adopters to read printed materials carefully or to follow guidelines closely.

Certain external incentives--specifically the USOE requirement of detailed compliance with guidelines as a condition of funding--proved effective in the original, compensatory-education-PIP field test, but continuing use of funds in this manner is not consistent with current USOE policy.

A reasonable expectation that target LEAs will be motivated to adopt the projects or practices should be a prerequisite for developing a diffusion effort. Assuming that strong, external incentives to replicate

accurately will not be provided (and probably would not be appropriate), substantial adaptation of projects/practices (bilingual or otherwise) should be anticipated.

6. Competition. A diffusion system intended to promote adoption of specific projects or practices may be in direct competition with: (a) federal regulations or laws; (b) state regulations or laws; (c) local regulations, policies, and existing programs; (d) other LEAs promoting alternative practices; (e) professional organizations promoting alternative practices; (f) commercial organizations promoting alternative practices; and (g) other diffusion systems promoting alternative practices.

The alternative projects/practices and their sources must be understood if the diffusion of specific projects or practices is to be successful. For each potentially competing source, the diffusion-system planners must decide whether to adapt to the conflicting position (often required where laws are involved) or to compete directly. This principle holds in all areas of education, but bilingual education is affected by an especially wide variety of laws and regulations that must be taken into account in planning a diffusion effort.

Summary of Substudy I Conclusions

The major conclusion of this and the other PIP studies is that a successful diffusion effort requires systematic planning. This planning must take into account:

- goals
- projects/practices
- target LEAs
- delivery system
- incentives
- competition

Substudy I Products

The major product of the diffusion substudy is a conceptual framework that can facilitate planning (or analyzing) a diffusion system. The conventions that were developed for generating such frameworks are described in Volume II of this report. The specific framework that was used in the Substudy I analysis is included as an appendix in Volume II.

A second product is a detailed, comparative analysis of the features of the four projects described in the PIPs. This analysis is also included as an appendix in Volume II, and is intended for the reader who wishes (a) to determine whether the PIPs contain information relevant to his or her interests, or (b) to understand more clearly why RMC judged that there were few real differences among the four bilingual projects.

Substudy II: Impact on Achievement

Conclusions

In the impact substudy, RMC consulted extensively with the field-test sites on the design and implementation of their required, Title VII project evaluations. RMC then reviewed (and, in some cases, reanalyzed) the local data, thoroughly and attempted to use the results to determine the impact of the diffusion effort on student achievement (see page 4).

This attempt was unsuccessful. While subjective impressions suggested that some (perhaps most) of the 19 programs were effective, technical problems with the evaluations precluded any clear, objective evidence, positive or negative, on the extent to which the diffusion effort affected student performance.

Furthermore, these technical problems are not specific to the 19 field-test sites or to bilingual programs. Although some of these problems make bilingual-program evaluation especially difficult, they affect all program impact evaluations, at least to some degree. The major problems are listed below.

Problems Beyond the Control of Evaluators

Lack of suitable comparison standards. Detection of program impact would require ongoing maintenance of extensive, extremely precise, baseline data for all district students. Few, if any, school districts maintain data bases that are adequate for detecting program impacts. Norm-referenced comparisons are not sufficiently precise for this purpose. Control groups are generally unavailable for bilingual or compensatory programs, since such programs usually serve all students who meet local selection criteria.

Lack of adequate tests. Standardized tests in English may be satisfactory for use in some impact studies, although they are not always suitable in bilingual programs. Few achievement tests are available in languages other than English, and completely satisfactory tests of language proficiency have not been developed.

Other Common Technical Problems in Program Evaluations

Lack of student description. Many evaluations fail to group students for analysis according to their skills and other characteristics. In bilingual programs, where some students speak fluent English and others very little or none at all, such grouping is especially critical.

Lack of program description. Many evaluations fail to group students according to the instruction they receive. This is essential in all bilingual, compensatory, or other individualized programs in which the instruction may vary widely from student to student.

Lack of match between test content and curriculum. The exact degree to which tests should match the curriculum is an important, unresolved issue in evaluation. However, in many evaluations, the tests bear almost no relation to the subject matter being taught, and are obviously insensitive to program effects.

Use of incorrect test levels. Test levels that are too easy or too difficult cannot measure the true impact of a program. Determining the correct test level is often an important, practical problem.

Inappropriate testing and scoring procedures. Testing and scoring procedures present no real technical problems but, in practice, inadequate procedures are common sources of evaluation errors.

Inappropriate analyses. This concern is not with the unresolved, sophisticated issues in data analysis, but rather that many evaluation reports still include generally discredited analyses (e.g., posttest-pretest gains, and grade-equivalent gains) (Horst, Tallmadge, and Wood, 1975).

Lack of interpretation. Many evaluators report any apparent increase in test scores as a positive result, with no attempt to show (a) that the gains are greater than would be expected from the same students if they were not in the program, or (b) that program activities could have been responsible for the increased gains.

Why Do These Evaluation Problems Persist?

The above evaluation flaws are not restricted to bilingual-program evaluations. In fact they are almost universal, even (as in the PIP study) when evaluations are conducted by highly competent evaluators. Only a few of the field-test-site evaluators were able to produce above-average evaluation reports. Some major reasons for this situation appear to be:

- Lack of evaluator time. Many evaluators are funded for a few days to complete tasks that require weeks.
- Conflicting and impossible demands. Local, state, and federal evaluation guidelines and requirements are often technically inappropriate and may conflict with each other.
- Uncritical audience. Evaluators often believe that their reports will not be read by any technically qualified persons, or perhaps not read by anyone at all.

In short, the technically inadequate local report appears to be the result of assigning the evaluator an impossible and futile task.

Recommendations from the Impact Substudy

- Implementation of project features should be confirmed before major impact studies are undertaken.
- Impact studies are not feasible in many local school districts and should not be required unless appropriate conditions are known to exist and adequate resources are provided.
- From the two recommendations, above, it follows that diffusion-system field tests should use process-evaluation methods. Evaluation of impacts on students should be restricted to a few, carefully selected sites where implementation has occurred and the technical requirements for impact evaluation can be met.
- Appropriate evaluation guidelines should be provided to local evaluators.

Substudy II Product

The major product of the impact substudy is a draft evaluation manual for bilingual programs. The draft manual is included as a separately bound appendix to the final report (Volume III). It consists essentially of the recommendations developed by RMC for the field-test sites, organized into a single volume. The manual deals primarily with student achievement outcomes. Brief sections deal with other important evaluation topics (e.g., formative evaluation, student affect, staff development, and parent/community involvement) but the manual is incomplete in these areas. The manual is in no sense a finished product but, rather, a starting point intended to spotlight some of the unresolved technical and philosophical issues in bilingual program evaluation.

ACKNOWLEDGMENTS

While this report was assembled by the authors, the content of the report represents the work and insights of a much larger group. Our monitors from the USOE Office of Evaluation and Dissemination, Burma Hulten and Ann Bezdek Weinheimer, provided continuing support. The cooperation and support from the Office of Bilingual Education, especially Norma Varisco de Garcia, the field-test coordinator, and program officers Luis Catarineau, Roberto Nelson-Genover, Manuel Nieto, and Leonore Rosales is also gratefully acknowledged.

We want to extend our thanks to all of the personnel in the 19 field-test sites who made our visits profitable in terms of the study as well as personally enjoyable, and we would like to express our special debt of gratitude to the project directors and local evaluators for their extraordinary cooperation in responding to our requests for information and assistance. In every sense, they have become a part of the study team and deserve substantial credit for any contributions that this study has made to understanding the dissemination of exemplary, bilingual-education practices.

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We would also like to acknowledge the many valuable inputs from our advisory panel. Their suggestions and recommendations have had a major impact on the final report although, of course, they are in no way responsible for either the content or format of the report.

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At RMC, all of the authors listed on the cover of this report participated in the conceptualization of the study and the preparation of the report, as well as in the data collection and processing. In addition, Joanne Binkley played a major consulting role, and Sarah Roberts participated in the early stages of the study. The massive task of typing and retyping the study reports was given to Marsha McLean, Linda Terhune, and Liz Cox. The outstanding job that they have done represents a major contribution to the project.

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May 1980

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1. INTRODUCTION

1.1 The Vocabulary of the Report

The fields of educational diffusion and bilingual education are replete with special definitions and abbreviations, and there are several basic definitions and distinctions that must be clarified before any discussion of the study is possible. Definitions refer only to usage in this report, and no assertions are made as to their applicability in other contexts.

1.1.1 Dissemination Terminology

1.1.1.1 Dissemination vs. Diffusion

Dissemination: Following the well established usage in communication theory, "dissemination" is used to mean the distribution of information or of materials containing information. Thus, PIPs have been disseminated when they have been distributed to LEAs. Implementation is not necessarily implied.

Diffusion: This term is used to mean the transfer of practices to new audiences. Thus, a project has been diffused when it is actually operating in adopter sites. In general, dissemination of information is one of the processes used to diffuse exemplary projects and practices.

1.1.1.2 Packaging vs. Project Information Packages (PIPs)

Packaging: This term is intended to imply (a) careful analysis of the exemplary projects and (b) development of descriptive and "how-to-do-it" materials.

Project Information Package (PIP). A PIP, as the term is used in this report, implies a specialized form of package that incorporates three basic concepts:

- Whole-project adoption: the validation, packaging, and diffusion of complete, exemplary projects as intact units, rather than the diffusion of selected parts of a project.

- Rapid start-up: capitalizing on the experience of the developer site to drastically reduce the time required by an adopter site to reach full operation.

- Stand-alone packages: the use of packaging as the primary means of diffusion, with a minimum of technical assistance. This implies a much more elaborate set of materials than would conventional diffusion methods that provide a great deal of technical assistance.

As the term "PIP" is used in this report, an LEA cannot "implement" a PIP. The PIP is a tool that is used in implementing a project. It is the project described in the PIP that is implemented.

1.1.1.3 Project, Context, and Program

Project: Specific procedures, staff specifications, guidelines, and materials that can, in principle, be transported to an adopter site. A project, as the term is used in this report, can be described without reference to particular individuals, or locations.

Context: The particular staff members, students, schools, community, and so on that are part of a program but cannot be disseminated to adopter sites.

Program: A "program" is a combination of a "project" plus a "context." That is:

Program = Project + Context

This is a critical distinction, because, intentionally or not, it is usually a program that is validated, and it is always possible that the developer-site context (e.g., an exceptional staff, that cannot be disseminated) is largely responsible for achieving exemplary status. The project might consist entirely of conventional practices that are not unusually effective except in the hands of exceptional personnel.

1.1.1.4 Adoption vs. Implementation

Adoption: The decision or commitment by an LEA to implement a project.

Implementation: The actual preparation for and operation of a project.

These terms are used in a general sense in this report and should not be confused with the terms, "Selection/Adoption," "Start-up," and "Operation" (used in Volume II) which refer to stages of the PIP-Diffusion Model.

1.1.1.5 Replication vs. Adaptation

Replication (of a PIP project by an adopter site): (a) Establishing specific procedures to ensure that all PIP-specified project goals are met, and (b) using the procedures described in the PIP except for minor instances where differences in contexts between developer and adopter sites require that procedures be changed in order to achieve PIP-specified goals.

Adaptation: Changing project goals or procedures to suit adopter-site characteristics or the preferences of the adopter-site personnel. "Adaptation" and "replication" are not mutually exclusive terms and the decision as to whether a site has replicated or adapted a project is highly subjective.

1.1.2 Bilingual-Education Terminology used in this Report

1.1.2.1 Bilingual Program vs. Bilingual Project

Bilingual program: A program of instruction using two languages and usually involving several years of schooling and several subject areas. Title VII bilingual programs in elementary schools are intended to provide instruction in and study of English, plus instruction in the native language (to the extent necessary to progress through school) and, in general, they also include staff development, culture and heritage, and community involvement components.

Features of bilingual programs differ, and the exact definition is not critical in this report, but it is important to note the distinction between a bilingual program, which includes the "context," and a bilingual project, which does not.

Bilingual project: A specific set of guidelines, procedures, materials, and so on for operating a bilingual program (see the definition of "project," under Dissemination Terminology, above).

1.1.2.2 Limited English-speaking (LES):

This term is used in only a few isolated places in the body of this report, and is redefined in each instance. This policy was adopted because of the many different interpretations placed on the Title VII definition of LES and the wide variety of criteria (performance on various tests, teacher judgment, home language) used in designating students as LES. "LES" is used in Appendix A, the site-by-site summary of diffusion results, as the term was used by each field-test site. Definitions are not necessarily consistent from site to site. Although the term has now been largely replaced by LEP (limited English proficiency), LES was more generally in use at the beginning of the study.

1.1.3 Abbreviations

ASK	Analysis and Selection Kit
BESC	Bilingual Educational Service Center
CODOFIL	Council for the Development of French in Louisiana
CL	community liaison
DAC	Dissemination/Assessment Center (now EDAC)
DFP	director of federal programs
DM	decision maker
DOE	Department of Education
EV	evaluator
FES	fluent English-speaking
IC	instructional consultant
JDRP	Joint Dissemination Review Panel
LEA	local educational agency
LEP	limited English proficiency
LES	limited English-speaking
MDC	Materials Development Center
NES	non-English-speaking
OBE	Office of Bilingual Education
OCR	Office of Civil Rights
OED	Office of Evaluation and Dissemination (formerly OPBE)
OPBE	Office of Planning, Budgeting and Evaluation (now OED)
PAC	parent advisory committee
P/C	parent/community
PD	project director
PIP	Project Information Package
PS	project secretary
SDC	staff development consultant
SEA	state educational agency
T	teacher
TA	teacher aide
TRC	Training Resource Center (now BESC)
USOE	United States Office of Education

1.2 Synopsis of Bilingual-PIP Field Test

1.2.1 Who Was Involved in the Field Test?

The evaluation of bilingual project implementation via Project Information Packages (PIPs) was funded by the Office of Education (USOE) for a 30-month period (1977-1979), and conducted by RMC Research Corporation. The study was designed to determine the effectiveness of PIPs in helping to diffuse exemplary bilingual projects.

The diffusion effort involved 19 school districts, each of which received an ESEA Title VII grant to implement one of four packaged bilingual projects.

1.2.2 What Were the Origins of the Four Bilingual Projects?

The four projects were originally developed by local school districts for their own students, were identified as exemplary by the American Institutes for Research (AIR) in a USOE-sponsored nationwide search, and were validated by the Joint Dissemination Review Panel (JDRP), comprising USOE and National Institute of Education (NIE) personnel. The projects were identified on the basis of apparent effectiveness in improving student achievement. None incorporated features judged difficult to duplicate, except for the requirement of experienced bilingual staff. The projects are:

- Project Adelante, from Corpus Christi, Texas.....Spanish/English
- Project Nuevos Horizontes, from Houston, Texas....Spanish/English
- Project Savoir, from St. John Valley, Maine.....French/English
- Project Venceremos, from Alice, Texas.....Spanish/English

1.2.3 What Was Included in the Four Bilingual PIPs?

The PIPs, developed by CEMREL, Inc. under a separate USOE contract, each consisted of a set of how-to-do-it manuals plus a synchronized tape

and filmstrip, and some awareness materials. In general, a different manual was prepared for each type of project staff member: project director, teacher, instructional consultant, evaluator, and so on. Some of the PIPs also included a manual for the use of performance objectives, a staff development manual, and site-developed materials.

Since staff positions differed from one project to the next, the sets of manuals also differed from PIP to PIP. In all the PIPs, however, the key manual was the Project Management Directory, which was designed to be used by the project director. A typical Project Management Directory was about 175 pages long with the following table of contents:

Chapter 1: Project Overview
Chapter 2: Using the PIP
Chapter 3: Management Approach
Chapter 4: Communicating with School and Community
Chapter 5: Continuing Beyond the First Year
Chapter 6: Budget
Chapter 7: Selecting Students
Chapter 8: Classroom Implementation
Chapter 9: Selecting Staff
Chapter 10: Staff Development
Chapter 11: Staff Relationships
Chapter 12: Materials/Equipment
Chapter 13: Facilities
Chapter 14: Goals
Chapter 15: Task Checklists

Each chapter listed the relevant project goals and the associated tasks for the project director, then provided a narrative discussion of the topic, illustrated with occasional charts or forms from the developer site. Appendix C provides a detailed analysis of the contents of the four bilingual PIPs.

1.2.4 How Were the Bilingual PIPs Disseminated?

Dissemination and support services. The basic dissemination system for the bilingual PIPs was the network of 15 Bilingual Training Resource Centers (TRCs) funded by OBE. Under the direction of USOE, these centers provided PIP-awareness materials to target LEAs in their regions and followed up with phone calls. Many also helped LEAs prepare Title VII grant applications, and later provided staff training services under much the same conditions that they provided training to other Title VII programs.

Grant application procedures. LEAs used PIP materials to help in preparing Title VII grant applications with the understanding that each successful applicant would receive a copy of the appropriate PIP at no cost. However, most applicants were instructed not to mention the PIPs in their applications, and were presumably judged anonymously along with all other Title VII applications.

1.2.5 What Were the Results of the Bilingual-PIP Diffusion Effort?

Adoption. The brochures and phone calls produced very few applications for PIPs. Most of the 19 adoptions resulted from personal contacts between local personnel and state or federal officials.

The process of matching the three different Spanish/English projects to specific adopter-site needs and resources was based on superficial project characteristics and, in effect, assignment was virtually random. However, because of the similarity among the PIP projects, this was not a major problem in the field test.

Implementation. RMC site visitors reported that, in their judgments, the bilingual program features implemented in most of the field-test sites ranged from adequate to excellent by current standards. However, since the focus was on the effectiveness of the PIP packages as diffusion tools, rather than on the bilingual programs of the study, no formal assessment of program quality was included in the study. The central issue was how closely the sites followed the PIP guidelines.

The answer was that, in general, PIP guidelines were not followed in detail. Extensive adaptation was the rule, often (in RMC's judgment) with good justification. In fact, the PIPs were found to be relatively minor influences in most sites. Program characteristics were shaped largely by local factors, federal and state regulations, outside consultants, and neighboring LEA programs.

Thus, while the bilingual programs in the 19 field-test sites could be considered a collective success in terms of project features, the PIP-based diffusion effort was not successful. The major breakdowns in the diffusion effort came in:

- Establishing diffusion-system goals
- Selecting projects for diffusion
- Packaging the projects
- Selecting and training diffusion agents

In short, the major breakdowns occurred in the planning and preparation of the diffusion effort, well before any target LEAs became involved in the field test.

1.3 An Overview of the Seven USOE PIP Studies

1.3.1 Where Did This Study Fit into the Broader USOE Packaging Investigation?

This was the final study in a set of seven. Together, the seven studies represent a six-year investigation by USOE into PIP-type packaging as an approach to the diffusion of exemplary projects. The seven studies involved three sets of projects, all developed in local school districts, and four sets of PIPs, developed by two different contractors:

	Projects	PIPs
A.	6 Compensatory Education Projects - First Wave	a. Prototype PIPs b. Revised PIPs
B.	6 Compensatory Education Projects - Second Wave	c. First-draft PIPs
C.	4 Bilingual Projects	d. First-draft PIPs

From RMC's perspective, the studies were conducted in two, overlapping stages:

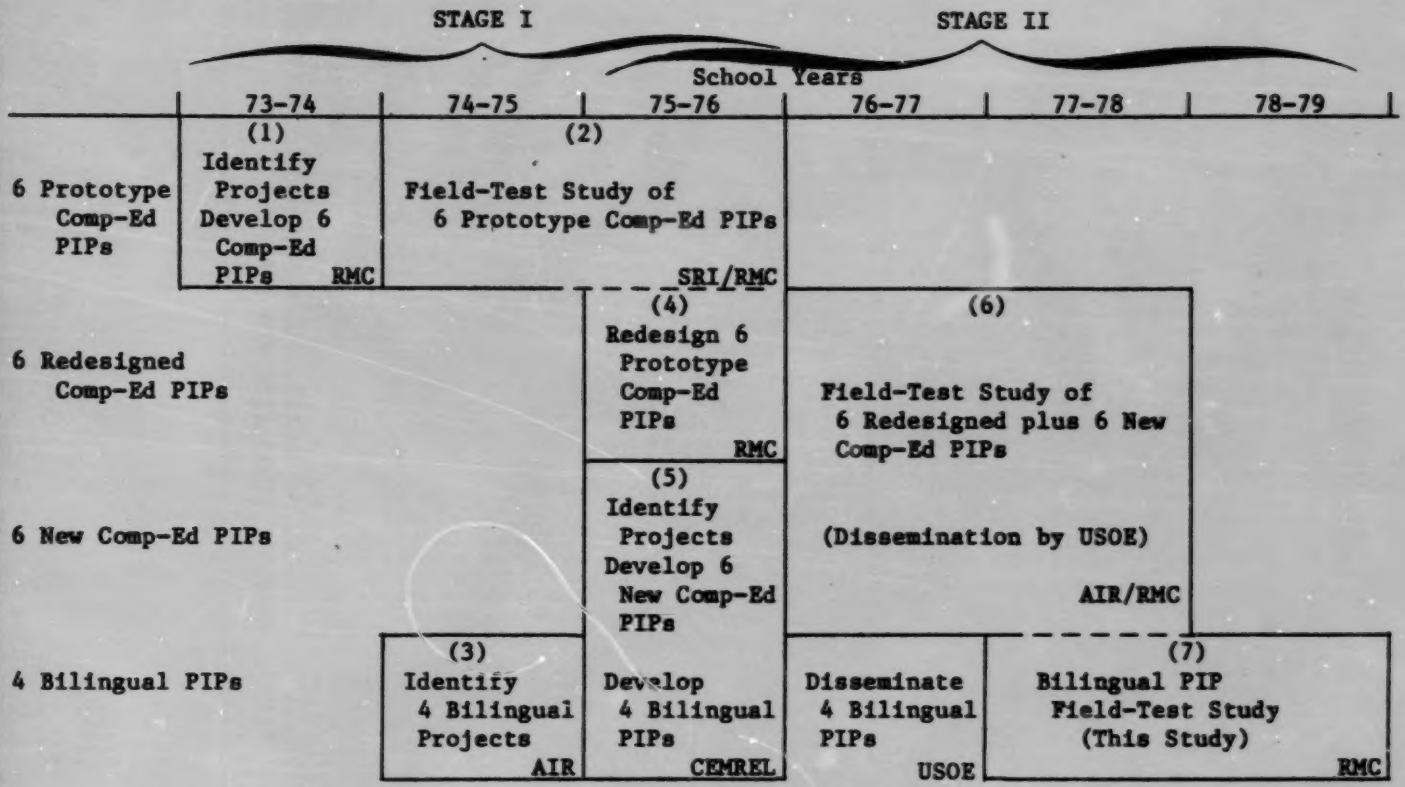
Stage I: Prototype Development and Tryout (Years 1 - 3)

1.	6 First-wave Comp-Ed Projects	Identify projects Develop prototype PIPs	RMC
2.	6 First-wave Comp-Ed Projects	FIELD TEST prototype PIPs	SRI/RMC
3.	4 Bilingual Projects	Identify projects	AIR

Stage II: Revision, Expansion, and Tryout (Years 3 - 6)

4.	6 First-Wave Comp-Ed Projects	Revise prototype PIPs	RMC
5.	6 Second-Wave Comp-Ed Projects	Identify projects Develop Comp-Ed PIPs	CEMREL
	4 Bilingual Projects	Develop Bilingual PIPs	
6.	12 Comp-Ed Projects	FIELD TEST all Comp-Ed PIPs	AIR/RMC
7.	4 Bilingual Projects	FIELD TEST Bilingual PIPs	RMC

Study 7 is the subject of this report. Studies 1, 2, 4, 6, and 7 were closely coordinated and shared common RMC staff. Studies 6 and 7, the Stage II field tests, overlapped and should be viewed as parallel rather than sequential studies. Studies 3 and 5 were indirectly coordinated with the others through USOE (see Figure 1).


STAGE I
STAGE II
School Years
73-74
74-75
75-76
76-77
77-78
78-79
6 Prototype Comp-Ed PIPs
(1) Identify Projects Develop 6 Comp-Ed PIPs RMC
(2) Field-Test Study of 6 Prototype Comp-Ed PIPs SRI/RMC
6 Redesigned Comp-Ed PIPs
(4) Redesign 6 Prototype Comp-Ed PIPs RMC
(6) Field-Test Study of 6 Redesigned plus 6 New Comp-Ed PIPs (Dissemination by USOE) AIR/RMC
6 New Comp-Ed PIPs
(5) Identify Projects Develop 6 New Comp-Ed PIPs
4 Bilingual PIPs
(3) Identify 4 Bilingual Projects AIR
Develop 4 Bilingual PIPs CEMREL
Disseminate 4 Bilingual PIPs USOE
(7) Bilingual PIP Field-Test Study (This Study) RMC

Each Row represents a different set of PIPs. The first two rows represent the same projects but different PIPs.

Each Box represents one contract. Dotted lines between boxes 2 and 4, and boxes 6 and 7 indicate closely coordinated studies, with overlapping staffs.

Figure 1. Summary of the USOE PIP-packaging investigation.

1.3.2 What Were the Results of the Other PIP Field-Tests (Studies 2 and 6)?

The following activities all coincided with the field test of the prototype, compensatory-education PIPs (Study 2): (a) identification of the bilingual projects and second-wave compensatory-education projects; (b) the development of the corresponding PIPs; and (c) planning of the later field tests (Studies 6 and 7). Thus, the bilingual PIPs benefited only partially from the results of the first field test (Study 2). The field test of the twelve, compensatory-education PIPs (Study 6), coincided with the bilingual-PIP field test (dissemination and implementation stages) and, therefore, the experience gained in Study 6 did not have a major impact on the bilingual-PIP diffusion effort.

The conclusions summarized here reflect the overlap among all the studies and, in particular, the fact that Study 6 and this study, the bilingual-PIP-field-test study (Study 7), overlapped substantially in time as well as staff.

Study 2: Field test of 6 Prototype, Compensatory-Education PIPs

Nineteen LEAs were given two-year (1974-1976) ESEA Title III grants (ranging from about $50,000 to $250,000 for the first year) contingent upon following PIP guidelines and cooperating with the field-test study.

Conclusion: A PIP-based diffusion system can lead to accurate replication if:

- Projects match LEA needs and resources
- Strong monetary incentives are provided

Study 6: Field Test of 12 Compensatory-Education PIPs

Year 1

PIPs were disseminated by eight regional contractors who provided primarily awareness activities. PIP materials were free, but LEAs were expected to use local, state, or federal funds obtained through conventional procedures (not contingent upon replication of the PIP projects).

Conclusion: This PIP-based diffusion system led to very few accurate replications because:

- PIP projects were adopted with little regard for LEA needs and resources
- LEAs had little inclination to follow PIP guidelines

Year 2

PIPs were disseminated via the National Diffusion Network (NDN). The developer-site project director for each PIP project was funded as a Developer/Demonstrator (DD) to provide awareness and technical assistance services. NDN State Facilitators provided additional awareness and coordination services.

Conclusion: This diffusion system was more DD-based than PIP-based. Some DDs made major use of the PIP materials. O hers did not. Effectiveness varied, depending on the projects and the DDs. Accurate replication occurred only when:

- DDs ensured a good match between the projects and LEA needs and resources
- DDs provided the incentives to replicate in the form of personal contact and persuasion.

1.4 The Dual Focus of the PIP Field Tests: "Project Diffusion" Versus "Impact on Students"

While there are many reasons for diffusing exemplary projects or practices, one of the major goals is to improve student achievement. The desired result may be represented as:

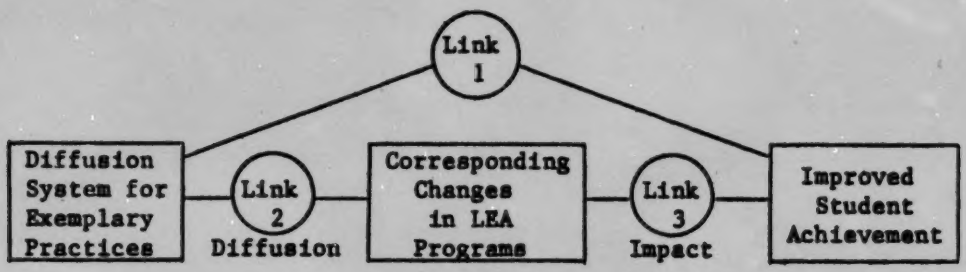


Figure 2. Intended diffusion-system results.

Since the purpose of a diffusion system is to produce change, improvement is the criterion of success and, ideally, one would like to evaluate Link 1 in the diagram directly:

- Link 1: Does the diffusion system lead to improved student achievement?

In a field test, however, there are too many variables involved to answer this question directly. If diffusion does not lead to improved achievement, such an evaluation provides no information as to why, or what to do next. Therefore, as a practical matter, it is necessary to examine Links 2 and 3 separately.

- Link 2: (Diffusion Question): Did the diffusion system lead to the intended LEA program changes (primary study question)?

- Link 3: (Impact Question): Did the changes in the LEA programs (whether related to the diffusion effort or not) lead to improved student achievement (secondary study question)?

In order to understand the impacts on students, we must, of course, first understand the effects on the schools. If, for example, it were found that the diffusion efforts were unsuccessful in establishing the intended projects in the schools, it would be appropriate to recommend changes to the delivery system in order to improve implementation of the projects. If it were found that the projects were implemented very well, but that there were no positive effect on the students, then it would be appropriate to recommend changes in the projects.

In principle, it does not make sense to ask the impact question until it is known that implementation has occurred. In practice, however, it is not always reasonable to wait for the answer to the diffusion question before beginning the impact investigation. The important point to emphasize is that, in this study, the attempt to evaluate project impact was independent of how well the projects, as described in the PIPs, had been implemented. The attempt was to evaluate each project as it was operating. Interpretation of project impact, of course, must depend on the features of the project that are in place; but, because the two questions had to be addressed concurrently, the study approach was to develop the best possible outcome evaluation for each site, whether or not the PIPs had been effective in producing faithful adoptions.

In practice, there is often no clear, simple answer to either question. However, the division into diffusion questions and impact questions provides an understanding of the diffusion problems and the policy implications. Therefore, diffusion and impact are treated as two distinct substudies throughout this report and, correspondingly, the body of the report is organized into two sections:

Substudy I: Diffusion of the Projects (Process Evaluation)

Substudy II: Impact on Students (Outcome Evaluation)

In general, "impact," as used in this report, refers to impact on student achievement. However, affective impacts are also considered

briefly, as are impacts of parent/community components of the bilingual programs. Impacts of staff-development components are discussed under both Substudies I and II although, strictly speaking, staff development is a part of project implementation rather than a part of the ultimate program outcomes.

2. SUMMARY OF SUBSTUDY I: PROJECT DIFFUSION

2.1 Substudy I Scope and Results

2.1.1 What Were the Diffusion Substudy Questions?

The bilingual-PIP diffusion study was designed to add to the general understanding of diffusion systems as well as to evaluate the usefulness of the four bilingual PIPs. The specific questions were:

- Adoption
  - — What influenced potential adopter LEAs to adopt or not to adopt the bilingual-PIP projects?
  - — To what extent were the projects that were chosen by adopters appropriate to those adopters?

- Implementation
  - — What factors (PIP, context, other) influenced implementation?
  - — What were the characteristics of the resulting projects, and how closely did they resemble those described in the PIPs?

2.1.2 What Was the RMC Role in the Diffusion Substudy?

RMC was not responsible for the development or dissemination of the bilingual PIPs. The RMC role in the diffusion substudy was that of a non-reactive observer of the PIP-diffusion field test. Unlike the consulting role in the impact substudy, RMC was not intended to have any training, consulting, or feedback role in the diffusion substudy, as this would have invalidated the field-test findings.

2.1.3 What Was the Research Approach to Answering the Diffusion Questions?

2.1.3.1 Process-evaluation approach. In the simplest terms, the diffusion substudy was based on a process evaluation that consisted of (a) describing the complete diffusion system as it was intended to operate, (b) describing the system as it actually operated, (c) comparing the two

descriptions and analyzing discrepancies, and (d) proposing changes to correct the problems. Recommendations, under this approach, could include either changes to the system goals, or changes to the procedures for meeting the existing goals.

2.1.3.2 Diffusion-system modeling. In principle, this approach is little more than common sense. In practice, however, the many people and organizations involved in a diffusion system, and their wide variety of goals, procedures, materials, and so on, make it difficult to describe such a system in a way that captures the roles of all the parts of the system and displays their interactions clearly. The key to the process evaluation described here is an approach developed by RMC in Studies 2 and 6 for the concise, accurate description of diffusion systems. The descriptions, or "models", are abstractions of the actual and intended diffusion systems, and include only those features that are relevant to understanding and revising the systems.

2.1.3.3 Data collection. Data on dissemination and implementation of the projects were collected by four two-person teams using guides for unstructured interviews and classroom observation. Due to the wide range of contexts, guides were individually tailored to each site. Each team was responsible for from four to seven sites, and each site was visited up to five times during the two school years covered by the study. Information gathered during the site visits was used to develop a model (i.e., a structured summary) of the actual bilingual program at each site. Then, the 19 site models, plus information about the USOE and TRC diffusion activities, were integrated into a complete model of the actual diffusion system. The intended diffusion system was inferred from USOE documents and from conversations with USOE personnel.

2.1.4 What Were the Results of the Bilingual-PIP-Based Diffusion System?

2.1.4.1 Adoption: What influenced potential adopter LEAs to adopt or not to adopt the bilingual-PIP projects? The nominal awareness activities (mailing of literature, with follow-up phone calls by TRCs) produced very few adoptions. Instead, some LEAs responded to personal contacts

with state or federal officials. Others were seeking assistance in establishing bilingual programs and contacted educators who were aware of the bilingual PIPs.

Motivations to adopt projects via PIPs included:

- Interest in new ideas for existing programs.
- Need for guidelines in establishing new programs.
- Belief that chances for Title VII funding would be improved.

Motivations not to adopt projects via PIPs included:

- Lack of credibility of "project-replication" and/or "replication-via-packages" concepts.
- Reluctance to participate in a national study concurrently with implementing a new program.
- Unwillingness to be restricted to operating at the grade levels specified in the PIPs.
- Reluctance to accept federal funding because of strings attached and/or bureaucratic constraints.

2.1.4.2 Adoption: To what extent were the projects chosen by adopters appropriate to these adopters? As sources of ideas and general guidelines, any of the projects could be considered appropriate to almost any district that had the required bilingual teachers. However, about half of the adopter sites did not have the bilingual teachers, and were forced to improvise without guidance from the PIPs.

At a more specific level, such project features as instructional objectives, materials, and team teaching were not always appropriate to local conditions and were subsequently adapted (or ignored) to fit adopter-site needs and constraints.

Among the Spanish-PIP sites, the choice among the three PIPs was most often based on the proportion of English to Spanish speakers as described

in the PIPs, an issue of great importance to the site personnel. However, the instructional approaches described in the PIPs did not reflect these differing proportions, and to all intents and purposes, selection among the three Spanish PIPs was random.

2.1.4.3 Implementation: What factors (PIP, context, other) influenced implementation? Across all 19 field-test sites, the major factors influencing implementation were existing local practices and conditions and state and federal regulations (e.g., Title VII). Previous local experience with bilingual education, project director and staff experience, TRC personnel, and locally hired consultants were the other major factors in most sites. Several sites depended heavily on neighboring LEA methods and materials to guide their project implementation. Some inexperienced sites leaned heavily on PIP management guidelines, and one site tried to follow the PIP to the letter whenever possible.

The lack of consistent USOE guidelines as to the nature and extent of permissible adaptations led to considerable variation among adopter-site programs. Most sites approximated the staff positions and organization described in the PIPs. Virtually all combed the PIPs for good ideas that were suited to their programs. Overall, however, we judged the PIPs to be a minor influence on the field-test site programs. This result was consistent with the results from Study 6, in which 12 compensatory-education PIPs were disseminated under roughly comparable conditions (see Section 1.3.2).

2.1.4.4 Implementation: What were the characteristics of the resulting projects, and how closely did they resemble those described in the PIPs? The quality of the bilingual programs in most of the field-test sites was subjectively judged by the RMC site visitors (most of whom were experienced bilingual educators) to range from adequate to excellent. Most employed sound, generally accepted bilingual teaching methods, although local conditions were more favorable to implementation in some sites than in others.

However, program quality was not the diffusion question. Rather, this study was concerned with replication of specific features. At a general level, any program consistent with Title VII guidelines (as were the field-test-site programs) would resemble those described in the PIPs. Beyond this general level, the resemblance was minimal. However, the lack of replication should not be construed as a deficiency of the field-test-site programs. On balance, deviations from the PIP guidelines probably improved suitability to local conditions.

2.2 Substudy I: Conclusions and Recommendations

2.2.1 A Systematic Approach to Diffusion

The principal contribution of the bilingual-PIP field test was to reemphasize the need (also demonstrated in the two compensatory-PIP field tests) for a systematic approach to planning diffusion efforts. The general finding from the three field tests was that the PIP-based systems worked well under some circumstances, but not under others. In the specific case of the bilingual-PIP field test, all sites established (or expanded) bilingual programs and were generally satisfied with the results but, from a diffusion perspective, the PIP-based effort was not very successful. While the diffusion effort provided help to the sites in establishing their own programs, in no sense did the system cause exemplary projects to be transferred intact from one district to another. In short, the PIP-based effort provided technical assistance, but not diffusion of projects.

In order to understand why this was so, and what should be done to ensure more successful diffusion efforts, should they be attempted in the future, it is helpful to think of a diffusion effort as a system made up of six major elements:

1. The diffusion goals set by the agency that plans the system.

2. The projects/practices available for diffusion.

3. The target LEAs, with their specific attitudes, needs, and resources.

4. The delivery system for bringing the projects/practices and the target LEAs together, including personnel, materials (e.g., PIPs), and all other resources.

5. The incentives for LEAs to (or not to) adopt projects and implement them accurately.

6. The competition faced by the system in the forms of laws and regulations, other formal or informal diffusion systems, and so on.

The success or failure of a diffusion system involves a complex interaction of all six elements:

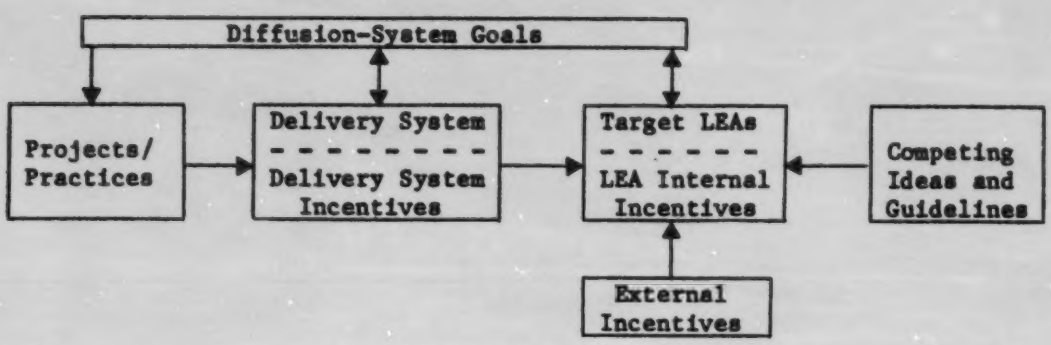


Figure 3. Simplified diffusion-system model.

This simplified model of a diffusion system is used for discussion purposes throughout this report. A much more elaborate model was used in the study for a systematic analysis of the diffusion effort (see Section 2.3, Substudy I Products).

In the three PIP diffusion attempts, these six elements were considered in isolation; some of them were not considered at all. The major recommendation from this study is that all six elements should be considered explicitly and systematically, in planning or analyzing a diffusion study. The major product of the study is a conceptual framework that can facilitate such systematic planning or analysis.

2.2.2 Detailed Conclusions and Recommendations Organized by the Six Elements of a Diffusion System

In the following six sections, study conclusions are organized according to the six diffusion-system elements listed above. Each section first summarizes the general conclusions of the three PIP field tests, then indicates the conclusions specific to this bilingual-PIP study.

2.2.2.1 Diffusion-system goals. At a general level, the USOE goal for all of the PIP diffusion efforts was to promote cost-effective, educational improvements for students, plus improved methods and procedures for school district personnel. (Positive impact on student achievement was a high priority outcome within the context of this general goal, and is discussed below under Substudy II.) Goals specific to the PIP-diffusion efforts (as opposed to diffusion efforts in general) included:

A. Whole-project adoption: Diffusion of intact, exemplary projects, as validated by the JDRP.

B. Rapid start-up: Intensive spring and summer preparation, leading to fall implementation at participating grade levels by the beginning of the school year.

C. Stand-alone packaging: Minimal technical assistance.

These goals were met to a certain extent in Study 2 (the prototype, compensatory-education-PIP field test) in which USOE provided strong monetary incentives to follow the printed guidelines closely. However, these goals were not met in Studies 6 and 7 (the parallel, compensatory- and bilingual-education-PIP field tests), in which adherence to PIP guidelines was less strongly enforced. Furthermore, since monetary incentives and enforced compliance with PIP guidelines are not consistent with current USOE policy, it seems unlikely that similar diffusion systems will accomplish these goals in the future.

In part, the failure to meet the goals in Studies 6 and 7 were due to problems most appropriately categorized under the other five elements of the diffusion system. These problems are discussed in the following five sections. In Study 7, the bilingual PIP field test, additional problems were created by certain conflicts in the study goals. These conflicts were of two types. The first type comprised the differences between USOE research goals and USOE service goals. Research goals required strict adherence to PIP guidelines, while service to the sites

often argued for extensive adaptation. The result was a somewhat inconsistent USOE policy on adaptation, with a consequently large amount of variance from site to site in the degree to which particular PIP-specified project features were implemented. On balance, however, adaptation was the rule.

The second type of conflict among goals involved differences between USOE goals and TRC or LEA goals. The PIP-diffusion goals were imposed on pre-existing TRC goals by USOE on rather short notice and with little or no increase in TRC resources. The result was that many TRCs were unenthusiastic about the PIP diffusion effort. The LEA's goals included procuring funding and technical inputs for their bilingual programs, and few, if any, of the field-test sites subscribed to the three USOE goals listed above. From the perspectives of the school personnel, the RMC site visitors, and even many USOE personnel, these goals were often seen as a hindrance to establishing the best possible bilingual programs and, in such cases, the success of the programs was usually given first priority.

The ultimate conclusion was that the failure to meet the three PIP-diffusion goals listed above was due, in part, to the fact that these goals are not appropriate except under very limited conditions. In the case of bilingual programs, these goals would, at best, be appropriate only for the diffusion of specific, highly structured and relatively simple instructional or management practices. Such goals are not appropriate for diffusion of complete, bilingual (or other) projects involving a complex of interrelated instructional, management, and staff development components.

Recommendations on diffusion-system goals. Based on the above conclusions, we recommend that, in addition to the diffusion-system changes recommended in the following five sections, the three PIP-diffusion goals listed above be revised as follows for future diffusion efforts:

A. Whole-project adoption should be replaced by adoption of separate practices (i.e., components of projects) if clearly defined,

highly structured practices exist. Otherwise, diffusion of projects should be abandoned in favor of diffusion of general principles that can be applied to suit the needs of each district. With the possible exception of some specific instructional practices, the diffusion of general principles is probably the most relevant approach given the current status of bilingual education.

B. Rapid start-up should be encouraged for practices that do not involve extensive changes in staff attitudes or major development of staff skills. However, in many LEAs and for many kinds of programs (including typical bilingual programs) long-term efforts to develop the readiness and capacity to implement new approaches are needed. For these programs and LEAs, rapid start-up is not feasible.

C. Stand-alone packaging (e.g., a PIP) is not effective except under very limited conditions. In general, a carefully planned balance of packaging and technical assistance is appropriate. The details are determined by the characteristics of the educational practices and the target LEAs. This recommendation applies to all kinds of practices, including those in bilingual education.

2.2.2.2 Projects and practices. Perhaps the most important requirement for a successful diffusion effort is to have useful, effective practices to disseminate. In the opinion of the authors, the process of selecting projects or practices for diffusion efforts has been grossly inadequate, not only in the PIP diffusion efforts but in most other diffusion efforts with which we are familiar. This problem has been reflected in the fact that the recent diffusion literature and diffusion conferences have focused almost exclusively on dissemination strategies and evaluation of results, with little or no concern shown for the needs of the LEAs or for the characteristics of the projects and practices available for dissemination.

The projects chosen for PIP-packaging were selected from among exemplary programs operating in school districts. Selection techniques did

not separate context effects from project effects nor were project characteristics analyzed adequately in terms of target LEA needs and resources.

Many truly exemplary programs can provide little in the way of procedures or materials that (a) can be readily implemented in other school districts, and (b) will produce major improvements. Projects and practices vary widely in their suitability for diffusion.

- Project factors favorable to successful diffusion:

  — Instructional rather than management focus in the project.
  — Self-contained, encapsulated projects affecting only a few staff members.
  — Specific, structured procedures or materials.
  — Relatively stable approach (not rapidly evolving).
  — General availability of required personnel skills and other resources.
  — New ideas.

- Project factors unfavorable to successful diffusion:

  -- Management rather than instructional focus in the project.
  -- Whole-school, whole-day projects.
  -- General, flexible guidelines for operation.
  -- Dynamic, evolving practices.
  -- Requirements for exceptionally skilled staff or elaborate materials, equipment, or facilities.
  -- Conventional ideas applied unusually well.

The bilingual projects chosen for diffusion presented major problems from a diffusion perspective. These projects were chosen more for their apparent achievement impacts than for their features with the result that, while the original programs were probably all very effective and may have shown considerable variation in their original contexts, there were very few real differences among the packaged projects. In general, the following comments apply to all:

- All four projects depended heavily on good bilingual teachers. This drastically reduced the number of potential adopters for which the projects were suitable, since an adequate supply of good bilingual teachers is not readily available in many LEAs (although this feature did not keep sites that lacked such teachers from applying for PIPs).

- The projects were relatively minor variations on standard themes. Thus, while experienced sites may have found some good ideas, they should not have expected any major innovations. Sites with no bilingual-education experience could appropriately have expected basically sound advice, although comparable advice was available from a multitude of other sources.

- Much of what distinguished the original, exemplary projects involved project management. While this is a major factor distinguishing good programs from poor ones, many management features are not readily transportable, since they require changes to firmly established LEA organizational and administrative structures.

- Instructional features of the projects were generally flexible in the developer sites. The general guidelines that were available were of only limited help to either experienced or inexperienced adopter sites.

- The projects, as packaged, were several years old by the time they reached adopters. Materials, and in some cases methods, were often viewed by adopters as out of date.

In short, the LEAs needed specific, current ideas for methods and materials that could be used in the classroom by the available teachers, and the four projects, as packaged, did not provide much help in these areas. The success of the projects in the developer sites appears to have been due largely to the exemplary application of sound management and

instructional principles by talented and dedicated staff in a supportive environment. These are primarily context features and thus are not readily diffusable.

Recommendations on choosing projects and practices. Projects or practices must be carefully analyzed, and selected to match the needs and resources of the target LEAs. For example, while the four bilingual projects chosen for PIP packaging depended heavily on good bilingual teachers following general guidelines, many field-test sites needed specific instructional procedures that could be used by monolingual English-speaking teachers with Spanish/French-speaking aides.

Adoption of whole, intact projects is reasonable only for encapsulated, instructional projects (e.g., a pull-out, reading lab). Projects affecting the operation of the school as a whole should be treated as a collection of components (management components, instructional components, parent involvement components, and so on) that can be disseminated as separate units. Typically, an exemplary bilingual program is made up of many such highly interdependent and context-determined components and cannot be diffused as an intact unit.

2.2.2.3 Target LEAs. Logically, the place to begin in designing any diffusion system is with the educational needs of the target-LEA students, and with the objectives, available resources, and other relevant characteristics of the target LEAs. A major, additional consideration in a diffusion system is the size of the target audience for a particular educational project or practice. These LEA-related factors are discussed below.

Student needs. Student characteristics (and consequently student needs) varied widely from site to site and also within each site. Language skills ranged from extremely limited proficiency up to native proficiency in both languages. Some students were clearly dominant in one language, a few were highly proficient in both languages, and still others were lacking adequate proficiency for academic purposes in either language.

Scores on standardized reading and math tests ranged from well below to well above average. In general, the PIPs did not provide adequate guidelines for dealing with this wide range of students.

LEA adoption objectives. It is not safe to assume that all LEAs are interested in making changes, and even those LEAs actively seeking change may not want to install completely new programs. Many of the LEAs involved in the three PIP field tests were more interested in refining existing instructional practices, or providing more effective management structures for loosely organized programs. Many were also motivated, in part, by the federal funds or technical assistance associated with the projects being disseminated. For these LEAs, it is important that the available projects or practices fit in with existing instructional and management approaches. Even those LEAs that wished to add completely new programs (or replace existing ones) were seldom willing to consider major changes to district-wide practices, or policies.

LEA resources. Resources required for the adoption of new projects may include personnel, materials, and facilities. Staff skills and attitudes are perhaps the most important LEA resources required by the bilingual PIP projects, and at least half of the sites could not obtain a complete staff of teachers with the skills and attitudes specified in the PIPs. Thus, these sites could not accurately implement either the PIP projects, or any other projects requiring a full staff of skilled, bilingual teachers. Instead, these sites needed projects designed for the personnel that were available. In the short run, this usually meant monolingual, English-speaking teachers with bilingual aides. In many LEAs, a long-term program of staff development was indicated.

Other relevant LEA characteristics. Organizational and administrative structures in the LEAs were also key features from a diffusion standpoint, and they proved highly resistant to change. Most administrative procedures, including staff hiring policies and management of federal projects, were applied uniformly within a given LEA, and exceptions were not normally made for single projects. This precluded implementation of many PIP-project features related to these management procedures.

In addition, the attitudes of key administrators are critical diffusion-system considerations. Attitudes toward bilingual education and whole-project adoption varied widely among the bilingual-PIP-field-test sites. In at least some sites, there were no enthusiastic PIP-project supporters in the administrations, and the PIP project directors had to fight an uphill battle.

The overall implication is that new projects must fit the attitudes and existing organizational structures unless long-term educational and capacity-building components are included in the diffusion system. A PIP-type diffusion system does not appear to be a feasible mechanism for changing these structures and attitudes.

The community contexts can be important factors, but in the PIP field tests they have been generally appropriate for the PIP projects. Often, principals in the bilingual PIP sites reported active interest from the community, and some told of parents calling to find out how to get their children into the programs.

A final key LEA characteristic, from a diffusion perspective, is the extent to which LEAs seek out information. Among the LEAs with needs for bilingual programs, many of those that actively seek out information already have programs in place. LEAs that have only rudimentary bilingual programs or none at all tend to be those that are not as active in seeking information about new programs. Thus, a much more aggressive form of awareness activity is needed to reach this important part of the target audience than was provided in the bilingual-PIP field test.

Size of the target audience. An additional diffusion problem concerns the size of the target audience, that is, the number of target LEAs for a given project or practice. In the bilingual PIP field test, the audience was broken into two groups--those LEAs with French-speaking students, and those with Spanish-speaking students. While the number of Spanish-speaking students in the U.S. is large, it appears that the number of LEAs with students from French-speaking backgrounds is relatively small.

Thus, while elaborate, PIP-type materials might be justified for Spanish/English projects, the PIPs could not be considered cost effective in the smaller market for French/English projects. A target audience of this size would suggest a quite different diffusion approach, probably involving less elaborate materials and a correspondingly increased level of technical assistance.

Recommendations on analyzing target LEAs. Both the characteristics and the size of the target audience should be clearly understood before planning a diffusion system:

- The LEAs with the greatest needs may require awareness and capacity-building efforts rather than project-diffusion efforts.

- The size of the target audience should be taken into account in planning diffusion systems. In general, elaborate materials and technical assistance strategies will not be cost-effective for small groups of target LEAs.

2.2.2.4 Delivery system. A delivery system includes all personnel, materials, and other resources used to bring the projects/practices and the target LEAs together. The delivery system must provide awareness plus technical support for selection and implementation of the projects/practices. In this study, the major components of the delivery system were the PIPs and (secondarily) the TRCs.

The three PIP field tests have led to the following general conclusions concerning delivery systems:

- An effective delivery system cannot be designed in isolation from the total diffusion system. That is, the delivery system cannot ignore the characteristics of the diffusion-system goals, the projects, the target LEAs, the incentives, and the competition.

- Printed materials (e.g., PIPs) are not read carefully in the LEAs unless strong incentives are provided. In general, printed materials (whether in PIP or other formats) are well suited to providing reference information, but not to:
  - focusing attention on key project features
  - persuading adopters to try new ideas
  - identifying problems and providing feedback
  - providing reassurance

  all of which are essential delivery-system functions. Other media (e.g., film, videotape) appear to have some of the same problems, although they were not evaluated in this study.

- While some level of packaging is probably an important component of most delivery systems, elaborate packaging (e.g., PIPs) is expensive and time consuming. It is cost effective only for large pools of target LEAs, and for projects/practices with long shelf lives.

- People (i.e., disseminators) are much more effective than materials in directing the attention of the target LEAs to essential points and providing feedback when things go wrong.

- PIP-based diffusion systems would be most effective for widespread diffusion of structured projects or practices accompanied by large monetary incentives to replicate. However, the use of monetary incentives in this manner is not consistent with current federal policy.

These generalizations apply equally to delivery systems for bilingual or non-bilingual projects/practices. A need for complementary efforts in local capacity building, while not unique to bilingual education, should be a special concern here due to the short supply of experienced, bilingual personnel in many target LEAs.

The bilingual-PIP delivery system. From a diffusion perspective, the delivery system for the bilingual-PIP field test was not very effective. Given the four PIP projects and the target LEA characteristics, it seems unlikely that any delivery system could have resulted in large numbers of faithful replications. However, if an appropriate match of projects and target LEAs had existed, the following delivery-system problems would have limited the effectiveness of the diffusion system.

The PIP materials, including the awareness booklets as well as the PIP manuals, were not particularly well matched to the projects, TRC dissemination activities, or to the incentives provided by the system. Unlike the compensatory-education projects, which were mostly straightforward, single-subject, instructional practices, the bilingual-education projects were day-long, multiple-subject, instructional, management, and staff development systems that required substantial accommodation and organizational change from adopters. In practice, the implicit assumption that the PIP concept was applicable to bilingual education was simply not well founded.

Instead of the stand-alone PIP format, materials might better have been designed for use in TRC-run workshops, or as reference materials to be used after completing such workshops. Under these conditions, the materials could have been simplified and shortened somewhat as compared to the PIP manuals, leaving the TRC presenter to tailor the workshops to the specific needs of the audience.

The workshop format would have also increased the likelihood that LEA personnel would study the content of the materials carefully, something that did not occur with the PIPs. As noted below, the delivery system provided no real incentives to read the materials thoroughly, and much of the existing PIP material was widely unused. Project directors reported that they liked the idea of having all project guidelines conveniently packaged, but few project directors or teachers referred to the PIPs extensively after the projects got underway.

The diffusion personnel, primarily disseminators from the TRCs, had three important functions in the field tryout: (a) promotion of the concept of adopting an exemplary project; (b) assisting in selection of an appropriate project, and (c) provision of staff training to LEAs. In all three functions, they were severely hampered by lack of training and resources. Many of the TRCs actively supported the PIP field test within the limits of their resources. Some, however, were unenthusiastic about the PIP diffusion approach and did little more than was required of them. In general, the latter group produced no adoptions. Clearly, successful disseminators must have adequate funds and training as well as positive attitudes toward their tasks.

The bilingual-PIP delivery system ignored other existing information and resource networks that could have been utilized to disseminate the PIPs. The use of these existing, informal and naturally-occurring networks might have produced PIP adoptions from a different set of LEAs or, minimally, could have bestowed additional credibility and redundancy to the TRC dissemination effort.

The results in the bilingual PIP study were that the nominal awareness activities produced very few applications. Selection of projects was essentially random. Some TRCs provided excellent staff training, but it was not always relevant to the PIP guidelines.

Recommendations on developing delivery systems. A delivery system must be designed systematically within the context of the complete diffusion system (goals, practices, target LEAs, delivery system, incentives, competition). Section 5.2 of this volume, together with Volume II of this report, describe a conceptual framework intended to facilitate systematic, diffusion-system design.

In general, a delivery system will require both people and packaging (although usually not PIP-type packaging). However, the functions of the people and the materials (and therefore the nature of the materials) will depend on the other parts of the diffusion system, with some systems

requiring relatively more emphasis on technical assistance and others requiring relatively more emphasis on materials.

2.2.2.5 Incentives. The PIP studies and other diffusion studies have shown that LEAs must be strongly motivated before they will make changes. The desires of LEA personnel to improve programs, and legal requirements to provide new services, obviously lead to some kinds of changes. However, these kinds of incentives usually do not motivate adopters to read printed materials carefully or to follow guidelines closely.

Certain external incentives--specifically the USOE requirement of detailed compliance with guidelines as a condition of funding--proved effective in the original, compensatory-education-PIP field test (Study 2), but continuing use of funds in this manner is not consistent with current USOE policy.

Recommendations on considering incentives. A reasonable expectation that target LEAs will be motivated to adopt the projects or practices should be a prerequisite for developing a diffusion effort. Assuming that strong, external incentives to replicate accurately will not be provided (and probably would not be appropriate), substantial adaptation of projects/practices (bilingual or otherwise) should be anticipated.

2.2.2.6 Competition. A diffusion system intended to promote adoption of specific projects or practices may be in direct competition with: (a) federal regulations or laws; (b) state regulations or laws; (c) local regulations, policies, and existing programs; (d) other LEAs promoting alternative practices; (e) professional organizations promoting alternative practices; (f) commercial organizations promoting alternative practices; and (g) other diffusion systems promoting alternative practices. All of these sources of competition affected the bilingual-PIP field test, and reduced the impact of the PIPs.

Recommendations on analyzing the competition. The alternative projects/practices and their sources must be understood if the diffusion of specific projects or practices is to be successful. For each potentially competing source, a decision is required as to whether to adapt to the conflicting position (often required where laws are involved) or to compete directly. This principle holds in all areas of education, but bilingual education is affected by an especially wide variety of laws and regulations that must be taken into account in planning a diffusion effort.

2.2.3 Summary of the Diffusion-Substudy Conclusions and Recommendations

2.2.3.1 Conclusions. The basic conclusion from the process evaluation was that while good bilingual programs were established in most of the field-test sites, and the bilingual-PIP diffusion effort helped the sites to establish these programs, the PIP diffusion effort was not very effective in getting substantial numbers of target LEAs to implement the projects described in the PIPs. Relatively few LEAs applied and, in the 19 sites that received PIPs and Title VII grants, program features were determined more by local factors and Title VII regulations than by the PIPs. Most of the LEAs felt that extensive adaptation of the projects was required and, in general, RMC concurred.

The basic system breakdowns had already occurred before the field-test sites became aware of the PIPs. The major breakdowns occurred in:

- Establishing system goals.
- Project selection.
- Project packaging.
- Diffusion agent selection and training.

2.2.3.2 Recommendations. A systematic approach to planning diffusion efforts is needed, and should include:

- Establishing specific, practicable goals.
- Selecting and validating appropriate practices.

- Analyzing target LEA needs.
- Developing a delivery system, with an appropriate balance of coordinated technical assistance and packaging.
- Providing incentives, if needed.
- Considering the competition, and adapting the diffusion system as necessary.

The PIP concepts (Section 1.1.1.2) are not suitable for the diffusion of complete, bilingual projects. Specifically:

The PIP Concepts:	Should be replaced by:
Stand-alone packaging	Complementary packaging and technical assistance
Rapid start-up	Long-term program and staff development
Whole-project adoption	Tailoring of practices to local needs

The PIP concept may be appropriate for the diffusion of some structured, relatively self-contained components of bilingual (or other) projects.

Finally, detailed diffusion-system recommendations depend on the goals that are set for the system. In particular, a system intended to promote the diffusion of specific, validated projects or practices with little or no adaptation will be very difficult to establish, and in such a system, each of the six elements listed above represents a major problem area. By contrast, a system that will simply provide target LEAs with access to new ideas and to technical assistance and which permits extensive adaptation is relatively easy to establish.

Given the types of projects and practices available for diffusion (bilingual and other), the former type of system appears to be unwarranted, and the latter is recommended as a more practicable alternative. However, we do not suggest that the two alternative types of systems are in any way equivalent. In the latter type of diffusion system (i.e., one that permits extensive adaptation), results in the target LEAs will vary widely, and expectations for the impact of such a system should be tempered accordingly.

2.3 Products of Substudy I

2.3.1 A Framework for Planning or Analyzing a Diffusion System

A major product of the diffusion substudy is an approach to developing frameworks or "models" of diffusion systems. The approach is specifically intended for systems designed and operated by agencies such as USOE or SEAs for large scale diffusion of projects or practices. The frameworks are intended to:

- Integrate the goals, projects, target LEAs, delivery system, incentives, and effects of competition.
- Include the processes of information transfer, decision making, and resource allocation.
- Focus on the actions available to the system operators (e.g., USOE) to achieve system goals, such as selecting and training diffusion personnel, developing guidelines and materials, and allocating resources.

This approach was initially developed by RMC for Studies 2 and 6, and was extensively revised in the bilingual PIP study. It is described in more detail in Section 5.2 of Volume II. Appendix E in Volume II comprises the complete model of the intended system as used in this study.

2.3.2 A Comparative Analysis of the Four Bilingual-PIP Projects

This product is intended for the educator who wishes to know, in some detail, what practices are described in the four bilingual PIPs. Since the PIPs are designed as step-by-step, how-to-do-it materials, it is a laborious process for the reader to extract these practices and even more difficult to compare one PIP with another. This comparative analysis should provide an efficient guide to the actual PIP contents.

The comparative analysis of the PIPs is included as Appendix C in Volume II.

3. SUMMARY OF SUBSTUDY II: IMPACT ON STUDENTS

3.1 Introduction to the Impact Substudy

3.1.1 Rationale for Substudy II

The ultimate goal of all of the PIP-diffusion efforts has been impact on students, especially improved achievement. Thus, the investigation of impacts on achievement was the major focus of this substudy. It should be kept in mind, however, that the primary focus of the entire, two-year, bilingual-PIP study was on diffusion. Achievement impacts were treated somewhat more extensively in the original field test of six prototype compensatory-education PIPs (see Study 2, Section 1.3.2). Achievement was not examined at all in the later field test of 12 compensatory-education PIPs (Study 6) that ran in parallel with the bilingual-PIP field test.

The impact substudy received secondary emphasis in the bilingual-PIP study because:

- It was not certain in advance that the diffusion system would produce the complete implementation of the projects in the target LEAs (and, in fact, it did not). Thus, it was not certain that a major effort should be invested in student outcome evaluation.

- Because the study paralleled only the first two years of a five-year project implementation plan, data could only be collected from grades K-2 of projects that would eventually expand to fourth grade. Thus the study could not provide student outcome results from completely implemented, fully operational programs.

On the other hand, if USOE had waited two years to obtain the diffusion results before considering an outcome evaluation, much of the data needed for a longitudinal impact assessment might never have been collected. Consequently, it was reasonable for USOE to request a limited form of

outcome evaluation, and this outcome evaluation was the basis of Substudy II. Before describing this substudy, however, it is necessary to consider two technical, evaluation distinctions that are central to the problems encountered in the substudy.

3.1.2 "Impact" versus "Performance Level"

This report refers repeatedly to the impact on achievement of a diffusion system, a program, or a project. By this we mean the change (hopefully improvement) in performance produced by new practices. The impact question is emphasized here because this was a diffusion study, and the justification for spending time and money on diffusion derives from the change that results. Impact on achievement is not the only impact of interest, but it is a special concern of many educators and diffusion personnel, and it is emphasized in this report.

Impact on achievement may also be of interest to the LEA, because most LEA decision makers would like to know whether changes in practices are followed by improved performance. However, the more important achievement consideration from the LEA point of view may be the performance level of the students. "Performance level" refers here to whether students are achieving well or poorly in relation to other groups of students or in terms of requirements for jobs and personal satisfaction. An LEA may not be completely satisfied with a large impact if the performance level is still low. Conversely, the LEA may be entirely satisfied with a small, positive impact if performance levels were already high.

From the standpoint of the diffusion-system planner, however, impact is the primary consideration. High performance levels are no indication of diffusion-system success, since they do not necessarily prove that there has been improvement due to the diffusion effort. Conversely, low performance levels do not necessarily imply diffusion-system failure, since they may represent improvement over still lower levels of performance. The distinction between student performance level and diffusion-system impact is illustrated in Figure 4.

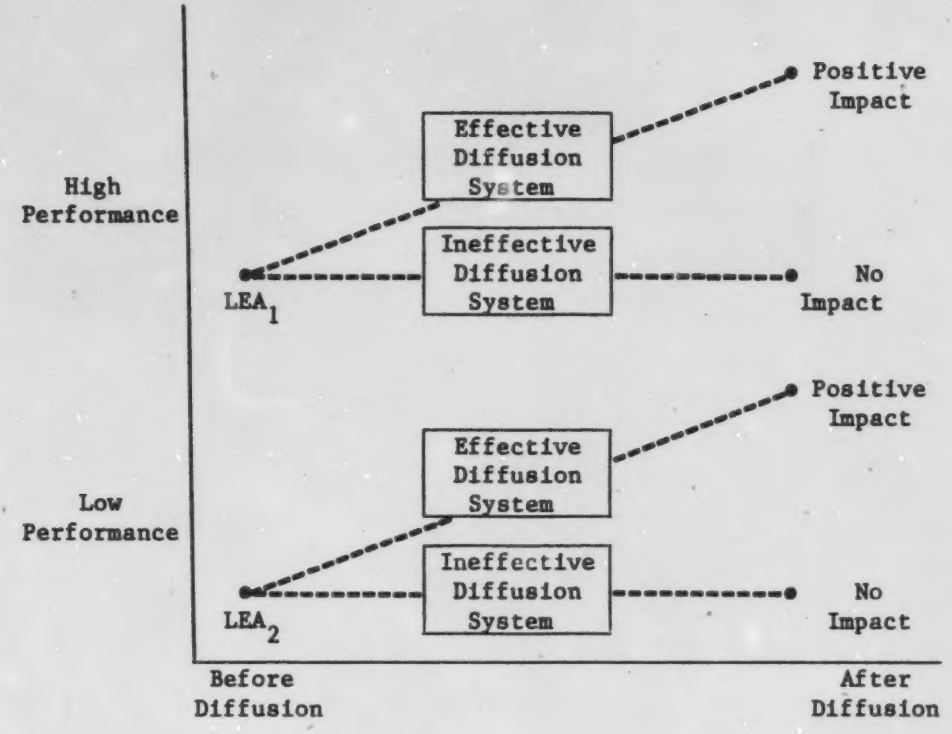


Figure 4. Performance level versus impact.

Thus, to the extent that student achievement outcomes are addressed in this diffusion study, the emphasis is on impact. Performance level is also discussed, but has only indirect relevance to the study.

3.1.3 "Apparent" Versus "Actual" Impacts of Exemplary Programs

In terms of the above diagram, one might naively assume that positive impacts would result from the successful diffusion of exemplary projects (i.e., in the PIP studies, projects developed and implemented with apparently positive impacts in the originating sites). Of course, it has already been noted (Section 1.1.1.3) that a single project in two different contexts leads to two different programs. However, an additional factor --the evaluation (and, in particular, the variation or error in evaluation procedures)--is involved in the apparent impact of a project on achievement. This distinction is illustrated in Figure 5.

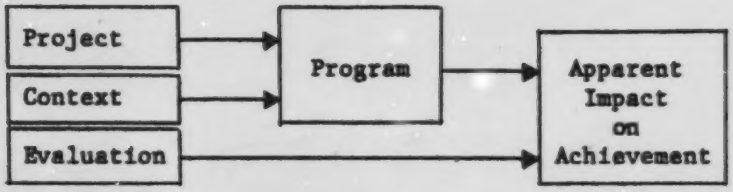


Figure 5. Factors affecting apparent impact.

The problem related to the evaluation component of the apparent impact is that measurement of program impact in the real world is very inexact. Because of the large amount of error variance, two different evaluations of the identical program may produce very different results. Further, the amount of error in a typical evaluation is large in comparison to typical program impacts on student scores (up to several times as large, Horst, 1978). Finally, the separation of project impacts from context impacts is next to impossible in many LEAs.

The net result is that (a) even the most faithful replication of an exemplary project in a new site is not likely to reproduce the original program, and (b) even if the programs were identical, differences (errors) in the evaluations of the originating and replicating sites would make it unlikely that the apparent impact of the project would be the same in the originating and replicating sites. The actual impact of a project is an elusive concept and, in practice, is very difficult to determine under field-test conditions.

3.2 Scope and Results of Substudy II

3.2.1 What Were the Impact Substudy Questions?

The impact evaluation focused on improvements in student achievement resulting from the diffusion effort. Affective impacts were also addressed, but to only a limited extent due to the technical problems involved. The major subject areas addressed were:

- English reading
- Spanish/French reading
- English oral language proficiency
- Math

The impact evaluation did not focus on student performance level because, as explained above, performance-level measures are not directly relevant to diffusion questions.* Furthermore, the performance level of the students does not indicate whether the bilingual programs are more effective than alternative approaches, unless the alternatives are compared with the bilingual programs under rigorously controlled conditions. Such conditions were not available in the field-test sites.

As the study progressed and the difficulties in answering the impact question in a bilingual-project field test became increasingly apparent, RMC's impact-substudy emphasis shifted toward methodological issues. The By the end of the study, major impact questions had become:

- In general, how, if at all, is it possible to determine the impact of new educational programs in real-school settings?

- Specifically, are there credible impact results (either positive or negative) from any of the field-test sites?

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*However, performance-level data, which were provided by the field-test sites, are reported in Appendix D for the interested reader.

3.2.2 What Was the RMC Role in the Impact Substudy?

RMC had two, distinct roles in the impact substudy:

- Consulting with local evaluators and project directors in order to make the evaluations as technically sound as possible.

- Interpreting and integrating results from the local evaluations.

RMC was not expected to collect data or to perform the original analyses on the data, and all decisions were ultimately made by the individual sites.

3.2.3 What Was the Research Approach to Answering the Impact Questions?

The basic intention in the impact substudy was to develop the best possible quasi-experimental designs in each LEA and, in particular, to obtain baseline and comparison-group data, wherever possible, that could be used to establish impacts.

3.2.3.1 Major problem areas. The first year of the study was intended as a development year for impact substudy. As the year progressed, it became clear that there were seven major problem areas that would invalidate the evaluations for the purpose of determining impact. These problem areas were:

- Comparison standards: In most sites, true control groups were simply unavailable due to state and federal laws, and few LEAs maintain historical comparison data that are suitable for establishing program impact. Various comparison groups of dissimilar students in dissimilar programs were available for performance-level comparisons, but differences between such groups and the bilingual-program students did not necessarily imply impacts due to the new bilingual programs. Many of the achievement tests used by the sites provided norms and thus made norm-referenced

evaluations possible. However, RMC had strong doubts about the relevance of available test norms to the program students and, in any case, recent evidence suggests that norm-based comparisons are very imprecise for any single school district.

- Technical adequacy of tests. Most of the sites used standardized tests for English reading and math. These tests can usually be considered technically adequate for their intended purposes, but may not be suitable measures for bilingual programs.

  In addition, the correct level of the test must be selected. Levels that are too easy or too difficult provide inaccurate measures. Although appropriate levels were not systematically established in most sites, floor and ceiling effects were seldom encountered among second grade students in the second year of the study.

  French/Spanish reading tests, language proficiency tests, and affective tests typically exhibit serious technical problems, such as lack of adequate reliability. Measurement in these areas was a major concern for all sites.

- Description of student characteristics: Many sites did not provide adequate descriptions of student language skills and backgrounds, but it was clear that widely differing students were grouped together in most analyses. For some sites, RMC could not interpret results because of insufficient information as to whether the results applied to students who were limited English speakers or fluent English speakers.

- Curriculum versus test-content match. RMC needed to know, at least, whether there was a match between the tests and the curricula at the general subject level (e.g., Were students who took English-reading tests actually studying English reading at all?) Even this basic information was not available for individual

students within a site, although RMC collected such information at the classroom level. Ideally, some indication was needed that the test covered the specific areas emphasized in the curriculum. This information was not available from most of the sites.

- Testing and scoring procedures. Appropriate procedures for testing and scoring present no real technical problems but, in practice, inadequate procedures are common sources of evaluation errors. Many sites experienced difficulties in these areas.

- Data analysis: There are many unresolved issues in data analysis. However, the major concern was that many sites were not applying basic, generally accepted analysis procedures, including:
  - -- Use of appropriate analysis models.
  - -- Use of appropriate test scales (e.g., standard scores).
  - -- Grouping students by language skills.
  - -- Including only students with both pre- and posttest scores, and analyzing dropouts separately.

- Interpretation of results: The final question that must be answered in an evaluation is: Given an apparent impact, is it reasonable to believe that it was due to the program?

  Answering this question requires, at a minimum, a rudimentary description of the instruction received by each student, and few of the sites provided this information. While some additional information was collected by RMC on instructional treatment at the classroom level, it was adequate for only the most general level of interpretation. Only three of the second-year reports presented any attempt at in-depth interpretation of results.

3.2.3.2 RMC impact-evaluation activities. Over the course of the first year, RMC organized two workshops for project directors and evaluators, and consulted with each site via telephone and during site visits.

Then, prior to the second year, RMC worked with the local evaluators, most of whom were highly skilled and experienced, to develop specific recommendations for the second-year evaluations for each site in each of the seven problem areas. Where they were implemented, these second-year designs eliminated many of the first-year problems, but the first two problem areas, the unavailability of adequate tests and the lack of appropriate comparison groups, were beyond the control of either the LEAs or RMC.

Because of the problems encountered in the above seven areas, the research approach shifted to focus on the prior question of the credibility of the impact results. A systematic (although basically subjective) procedure was developed for evaluating the credibility of impact findings from the field-test sites. This procedure consisted of rating each evaluation (each subject area in each site) as to how well the impact-evaluation problems had been solved in each of the seven problem areas.

All local site evaluation reports were examined and, in addition, RMC obtained raw data and conducted extensive additional analyses for selected sites. Second year, second-grade data were examined first because second-grade data normally suffer less from the problems of testing young children than do kindergarten and first-grade data, and thus could be assumed to provide an upper limit on the precision of the available results.

The evaluations of all four subject areas (English reading, Spanish/French reading, oral English language proficiency, and math) were rated for each site as to the extent of the impact-evaluation problems in each of the seven areas:

- Comparison standards.
- Technical adequacy of tests.
- Description of student characteristics.
- Curriculum versus test-content match.
- Testing and scoring procedures.
- Data analysis.
- Interpretation of results.

The overall credibility of the impact results was held to be no more credible than the weakest link in the seven areas.

3.2.4 What Were the Results of the Impact Substudy?

The results were that only one of the 19 evaluations was even somewhat convincing in terms of impact. The remaining evaluations simply provided little or no information as to whether or not there had been an impact (although two of the other evaluators provided excellent analyses of the problems encountered, and one of these developed an exemplary longitudinal design that may answer the impact question in the future).

None of the sites was given a "fully convincing" rating in any of the seven areas, but the worst problem area was that of comparison standards. In most LEAs, it appears that there is no way that a bilingual-program evaluator can obtain the necessary background and comparison data unless these data already exist as a result of an ongoing, district-wide evaluation program. Even where district-wide programs exist, there is no guarantee that the available information will be suitable for answering the impact question.

In general, English reading and math received the highest impact-credibility ratings. The additional problems of measuring English language proficiency and French/Spanish reading made the credibilty of impact results even lower in these subject areas.

Evaluations of impact on student affect and parent/community involvement were also examined, although in less detail. Student affective impacts are, in general, even more difficult to assess than are achievement impacts, and no definitive conclusions were reached in this area.

The success of the parent/community involvement components are generally easier to determine, at least at the level of counting attendance at meetings and recording participation in the classrooms. Most sites could report advances in these areas.

3.2.5 Problems with LEA Evaluation Reports

While some of the problems with the evaluations were beyond the control of the local evaluators, the problems with the field-test-site evaluation reports, however, are matters of some concern. Evaluation reports serve a variety of purposes (e.g., compliance with federal regulations, auditing, reporting to LEA decision makers and school boards) and may influence the development of recommendations for program changes. Many of the reports provided documentation of staff development, parent involvement, and some description of program implementation, and thus, would be useful for some of these purposes. However, with three notable exceptions, these reports, like most LEA evaluation reports, were incomplete and/or misleading to the extent that they were inadequate for any achievement-outcome evaluation purpose, performance-level assessment as well as impact measurement.

One of the exceptional reports described a well-reasoned design and analysis that did provide a great deal of locally useful information as well as some evidence on achievement impacts. A second reflected an exemplary, longitudinal design that should provide both impact evidence and other locally useful information in future years, although data were not available in time for this report. The third provided an excellent analysis and discussion of the evaluation issues and problems, but problems beyond the control of the evaluator precluded any impact evidence and severely limited the value of the evaluation for any local purposes. Two additional reports showed noteworthy attempts to establish appropriate designs that may well produce valuable information in future years.

Problems among the remaining reports included incomplete information about--(a) student characteristics, (b) numbers of students, and (c) tests and levels in use. Many reports also used inappropriate scales (e.g., grade-equivalent scores) and inappropriate evaluation models (e.g., post-test minus pretest) (Horst, Tallmadge, and Wood, 1975). In fact, some reports reflected major problems in every one of the seven areas discussed above.

These problems, however, are not peculiar to the 19 field-test sites or to bilingual-program evaluations. In fact, in our experience, they are typical of all local evaluations of all types of programs, whether conducted by LEA evaluators or outside consultants. We were somewhat surprised by the deficiencies in the PIP-field-test-site reports, because we had known and worked with the evaluators for two years, and knew most of them to be highly competent professionals. In addition, RMC had provided guidelines that, if followed, would have eliminated many of the problems with the reports. The question is--What accounts for the deficiencies in these (and most other) LEA evaluation reports?

In speculating as to the answer, it is essential to keep two key points in mind:

- the quality of these reports is no worse than average. The quality of most evaluation reports is low. This is not a problem of bilingual education or of these 19 LEAs.

- the evaluators in most of these sites were highly skilled. In many cases, it is safe to assume that they knew and understood the weaknesses of the reports.

In some sites, there were obvious reasons for the problems (e.g., the evaluators resigning before the reports were completed). In most cases, however, we believe that the reasons were of a different kind, and that they have profound implications for the evaluation of all types of federally funded, education programs. We believe that at least three factors are involved:

- Lack of evaluator time. Most evaluators had only a few days to do tasks that would require weeks to complete properly. There appears to be a basic lack of understanding on the part of local and funding-agency personnel.of the complexity of evaluation tasks.

- Conflicting, inappropriate and impossible demands. Local, federal, and other regulations are often conflicting. In addition, these regulations may call for inappropriate procedures (e.g., grade equivalents) or set unrealistic goals (e.g., impact evaluation). Consequently, the evaluator is often faced with a task that could not be done correctly, even if the time were available.

- Non-use of reports by funding agencies. Site personnel have no indication that their reports are carefully read or that the results are used for decision making purposes by the agencies requesting the reports.

In summary, it is not surprising that the local evaluator, frustrated by lack of time and impossible demands, and reasonably certain that the report will go unread by any critical, technically sophisticated audience, produces reports that are less than adequate.

3.3 Substudy II Conclusions and Recommendations

3.3.1 "Impact-Evaluation Credibility" versus "Program Effectiveness"

The lack of credible impact results should not be construed as a criticism of either the field-test-site programs or evaluations. The conclusion reached by RMC was that impact evaluation of a new bilingual program is extremely difficult in most LEAs and would require establishing an elaborate, district-wide evaluation system several years in advance of installing the new program. At a minimum, consistent baseline data for all students would be required, both before and after the start of the new program. The combined expertise of the RMC staff and the 19 local evaluators could do nothing to change this situation.

At the same time, the programs established in the field-test sites may very well have had positive impacts on student achievement. The conclusion of the study is that most of the evaluations provided no information, positive or negative, about how these students would have performed in the absence of the new programs.

3.3.2 Selection of Educational Practices for Diffusion

The apparent impact on student achievement is not a sufficient criterion for selecting practices (bilingual or other) for diffusion. User satisfaction and applicability in other LEAs are of primary concern to adopter sites, and should be considered first.

However, most practices selected on the basis of the latter criteria cannot be expected to have a major impact on achievement in the target LEAs, and such practices probably do not justify very expensive diffusion efforts. Before elaborate efforts to diffuse specific practices are undertaken, the actual impact that could be expected in various contexts should be determined through careful research.

3.3.3 Evaluation of Diffusion-System Impacts

Performance-level evaluations are of major importance to LEAs but are of little relevance in diffusion studies. Ideally, impact evaluation (i.e., the determination of changes due to new practices) should be used to determine the ultimate value of a diffusion system.

However, given the current state-of-the-art, impact evaluation (of bilingual or other programs) is impossible in most school districts, because the required baseline data are not available. Therefore:

- Field tests of diffusion systems should be restricted to process evaluations designed to determine whether or not the intended practices are implemented.
- The assessment of actual impacts should be determined under carefully controlled conditions in carefully selected school districts. Before undertaking such assessments, implementation of the practices and availability of appropriate comparison data should be assured. Due consideration for the generalizability of the results should also be required.

3.3.4 Broader Implications for Program Evaluation

Evaluation requirements established by LEAs, SEAs, and federal agencies should be reconsidered in terms of whether:

- The requirements can be met
- The results will be used

For those evaluations that are both useful and feasible:

- Adequate guidelines should be developed
- Adequate funds should be provided
- Adherence to sound procedures should be required

In particular, consideration should be given to--(a) establishing long-term data collection and storage procedures, and (b) the reporting of longitudinal data on a less-than-annual basis.

3.4 Substudy II Product: A Preliminary-Draft Evaluation Manual

The major product of the impact substudy is a collection of guidelines and worksheets that were developed by RMC for the field-test sites during the study in an attempt to solve problems in the seven problem areas discussed above. These guidelines and worksheets have been organized into a preliminary-draft evaluation manual dealing with performance-level and impact issues. The manual does not cover process evaluation, monitoring of student progress and other important evaluation topics.

The preliminary draft manual emphasizes realistic solutions (or partial solutions) rather than theoretical principles. It is intended as input to developing a set of highly specific and practical guidelines for generating useful, local evaluations of student achievement in bilingual programs. Such a manual could be used together with a process evaluation manual to develop a complete bilingual-program evaluation.

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